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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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CONNOLLY BOVE LODGE & HUTZ, LLP
P O BOX 2207
WILMINGTON, DE 19899

EXAMINER	
GILLESPIE, BENJAMIN	

ART UNIT	PAPER NUMBER
1796	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/538,760	NGUYEN-KIM ET AL.	
	Examiner	Art Unit	
	BENJAMIN J. GILLESPIE	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *29-35 and 37-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *29-35 and 37-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al ('725) in view of Bader et al ('265). Carter et al teach cosmetic and pharmaceutical compositions comprising polyether-urethanes having allyl groups and a method for their production comprising the reaction product of (A) polyisocyanate, (B) allyl functional polyether polyol, and (C) additional polyether polyol. In particular, patentees explain that (A) is first reacted in molar excess relative to (B) thereby creating an isocyanate-terminated prepolymer, and said prepolymer is then reacted with (C) (Col 1 lines 9-13, 22-24, 49-72). Although, no exact NCO:OH ratio is disclosed for the creating of the isocyanate-terminated prepolymer, it would have been obvious to utilize a ratio of 2:1 since Carter et al teach that the polyisocyanates consist of diisocyanate, and the prepolymer is terminated with isocyanate groups, i.e. for every

one OH group, there are two NCO groups. Carter et al fail however to disclose the reaction of (A) and (B) in the absence of solvent or relevant reaction temperatures.

3. Bader et al also teach polyether-urethanes comprising the reaction product of (A) diisocyanate and (B) allyl functional polyether polyol. Specifically, said reaction takes place in the absence of solvent and when (A) and (B) are combined the resulting mixture "rose spontaneously in temperature to 60˚C," along with further heating to temperatures of 100˚C (Col 1 lines 0-15, 25-27, 52-56; col 3 lines 48-61). Therefore it would have been obvious to synthesize the prepolymer of Carter et al in the absence of solvent and at temperatures of at least 60˚C since they are disclosed by Bader et al as being suitable parameters for creating polyether-urethanes having allyl groups. Finally, regarding the glass transition temperatures of claims 30 and 31, one would reasonably expect the resulting prepolymer to exhibit the same properties since is based on the same reactants and produced by an analogous method.

4. Claims 29-35, 37-44, 46, 49-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al ('725) in view of Bader et al ('265) in further view of Kim et al (WO 99/58100), translation provided by 6,579,517. Aforementioned, Carter et al in view of Bader et al render obvious polyurethane that is the reaction product of allyl functional polyether, diisocyanate, and additional polyol, wherein the resulting polyurethane is useful as a setting agent for cosmetic hair treatment. However patentees fail to teach additional polysiloxane polyol, the incorporation of additional unsaturated monomers, cosmetic carriers, and other additional components.

5. Kim et al also teach cosmetic compositions comprising polyurethane, wherein said cosmetic exhibits superior film-forming properties when polysiloxane having free hydroxyl or amine groups is covalently bonded to free isocyanate in the polyurethane (Abstract; col 2 lines 9-

16; col 4 lines 37-49; col 6 lines 29-44; col 8 lines 38-44; col 14 lines 3-20, 46-47, 59-60). The polysiloxane may either be used to produce an isocyanate-terminated prepolymer or react with an already synthesized prepolymer. What's more, additional reactive compounds may be incorporated in the polyurethane such as compounds containing ionic groups and polymers based on ethylenically unsaturated mono-and dicarboxylic acids, vinylamides; these compounds may be incorporated in the presence of solvent (col 9 lines 25-50; col 10 lines 53-58; col 11 lines 25-28).

6. Furthermore, the cosmetic composition preferably contains carrier species such as aliphatic hydrocarbons, as well as other additives such as antifoamers, perfumes, and colorants, wherein all components of the cosmetic are present in amounts that correspond to applicants' claims (Col 17 lines 19-26; col 18 lines 40-58). Finally, Kim et al explain that this specific composition results in a cosmetic composition that exhibits superior performance properties, while being easily re-dispersed, which facilitates "washout" and removal (Col 1 lines 17-30; col 4 lines 37-42).

7. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include polysiloxane, polymers based on ethylenically unsaturated mono-and dicarboxylic acids, vinylamides, and ionic group containing compounds since Kim et al explain that these compound result in a cosmetic that has enhance film forming properties as well as superior "washout" and removal characteristic. Similarly, it would have been obvious to include the additives of Kim et al since they are disclosed as being useful in polyurethane based cosmetic compositions, and it is prima facie obvious to add a known ingredient for its known function. *In re Linder* 173 USPQ 356; *In re Dial et al* 140 USPQ 244.

8. Claims 45, 47, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al ('725) in view of Bader et al ('265) in further view of Kim et al (WO 99/58100), translation provided by 6,579,517, and Dieing et al (WO 00/49998), translation provided by 6,964,774. Aforementioned, the prior art render obvious a cosmetic composition comprising a cross-linked polyurethane corresponding to applicants' claims, however patentees fail to further teach the presence of a starch cross-linker, the pH of the solvent, or a steam distillation or stripping step.

9. Dieing et al teach a cosmetic composition based on allyl-functional urethanes comprising the reaction product of polyisocyanates, polysiloxanes, and unsaturated hydroxyl-functional compounds (Abstract; col 6 lines 19-27; col 14 lines 41-44; col 4 lines 33-45). Patentees go on to explain that a preferred cross-linking agent for use in the cosmetic composition consists of natural sugars, the polymerization may take place in water, which has a pH of 7, or if polymerized in the presence of solvent the polymer is steam distilled to remove any traces of solvent (Col 11 lines 8, 17-19; col 14 lines 21-24).

10. Therefore, it would have been obvious to utilize a starch as a cross-linking compound in the polyurethane of Carter et al based on the motivation that Dieing et al teach it as a preferred cross-linking compound for cosmetic urethanes, and it is prima facie obvious to add a known ingredient for its known function. *In re Linder* 173 USPQ 356; *In re Dial et al* 140 USPQ 244. Furthermore, it would have been obvious to utilize solvent having a pH between applicants' claimed range since Dieing et al explain water is a suitable solvent, which is commonly known to have a pH of 7. Finally, it would have been obvious to include a steam distillation step based on the motivation that it is useful in removing traces of solvent, which is desirable since the final

product will have reduced health and environmental concerns attributed to volatile organic compounds.

Response to Arguments

11. Applicant's arguments, filed 1/9/2009, with respect to the rejection of:

a. Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al ('725) in view of Bader et al ('265).

b. Claims 29-35, 37-44, 46, 49-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al ('725) in view of Bader et al ('265) in further view of Kim et al (WO 99/58100), translation provided by 6,579,517, and

c. Claims 45, 47, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al ('725) in view of Bader et al ('265) in further view of Kim et al (WO 99/58100), translation provided by 6,579,517, and Dieing et al (WO 00/49998), translation provided by 6,964,774

2. Have been fully considered but are not persuasive.

3. Applicants' argue the claimed invention is patentable over the prior art because Carter et al fail to teach or suggest an NCO:OH ratio that corresponds to the range of claim 29. Instead applicants state the relied upon isocyanate-terminated prepolymers are based on the reaction of diisocyanate and non-polymeric glycol.

4. In response, the examiner would like to point out that the language of column 1 lines 64-68 states: "[a]nother procedure is to first react the polymeric glycol with a molar excess of the

organic diisocyanate to provide an isocyanate-terminated polymer after which the non-polymeric glycol is used to extend the chain". Properly interpreted, this language clearly establishes that the relied upon prepolymer is produced by reacting **diisocyanate** and **polymeric glycol**.

5. Furthermore, the examiner notes the language of column 1 lines 67-69, which states the chain-extender also "react[s] with any free organic diisocyanate [that] *might* be present", however, it is the examiner's position that this also does not teach away from the claimed NCO:OH ratio. The term "might" is optional, and one of ordinary skill would understand that when an excess of diisocyanate relative to polymeric glycol is used, i.e. NCO:OH ratio of 2:1 to 2.2:1, additional chain-extender is used to consume monomeric diisocyanate, which can be toxic. Furthermore, the examiner would like to point out that when additional chain-extender is later included, the prepolymer is already formed and therefore would not affect the original NCO:OH ratio between polymeric glycol and diisocyanate.

6. Applicants' remarks concerning the combination of Carter et al in view of Bader et al have been noted, but are not persuasive. In particular, applicants state that the combination of Carter et al in view of Bader et al is not proper because substituting the polyether of Carter et al into Bader et al would result in a composition that teaches away from Bader et al.

7. In response, the examiner would like to first point out that applicants have not provided any data supporting this position and instead appear to be relying on an unsubstantiated opinion which can not be substituted for fact. *In re Pike et al.,* 84 USPQ 235; *In re Renstrom,* 81 USPQ 390.

8. What's more, the examiner would like to remind applicants that the claimed invention is rejected as being unpatentable over (A) Carter et al in view of (B) Bader et al. However,

applicants have argued the prima facie case of obviousness as if it were based on (B) Bader et al in view of (A) Carter et al. The examiner never set forth a rational that the allyl-functional polyether polyol of Carter et al could be substituted into the *composition* of Bader et al. Instead the examiner argued a reasonable expectation of success exists in utilizing the *method* of Bader et al to produce the relied upon polyurethane of Carter et al. As a result, applicants' remarks are not persuasive since they fail address the prima facie case of obviousness set forth by the examiner.

9. Finally, applicants argue the claimed invention is patentable over the prior art because when m=0 and n=3, formula disclosed by Carter et al on column 2 lines 51-55 fail to satisfy the claimed "polyalkylene glycol monoallyl ether"; the examiner disagree. Contrary to applicants' remarks, the language "polyalkylene glycol monoallyl ether" does not limit the claimed compound to the extent that applicants' allege. Instead this language merely requires an allyl functional polymer that also contains multiple alkylene oxide mers, which Carter et al clearly satisfies. Finally, if applicants maintain that the scope of claims 34 and 37 are as limiting as they allege, the examiner would like to point out that Carter et al also allows m=1 and n=3, which provides a compound comprising only multiple ethylene oxide mers and a terminal allyl group.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

11. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN J. GILLESPIE whose telephone number is (571)272-2472. The examiner can normally be reached on 8am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rabon Sergent/
Primary Examiner, Art Unit 1796

B. Gillespie